<div align="center">REMARKS</div>

I. INTRODUCTION

In response to the Office Action dated September 6, 2006, claims 1, 8, 15, and 22 have been amended. Claims 1-28 remain in the application. Entry of these amendments, and re-consideration of the application, as amended, is requested.

II. CLAIM AMENDMENTS

Applicants' attorney has made amendments to the claims as indicated above. These amendments were made solely for the purpose of clarifying the language of the claims, and were not required for patentability or to distinguish the claims over the prior art.

III. Provisional Double Patenting Rejection

Claims 1, 8, 15, and 22 were provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1, 10, 19, and 28 of copending Application No. 10/085,346. Applicants note that the subject matter of the copending application and the present application may change thereby obviating the need for the submission of a terminal disclaimer. Applicants may be willing to submit a terminal disclaimer should one become necessary. However, at this time, Applicants traverse the rejection while reserving the right to submit a terminal disclaimer at a later date and upon the determination of allowable subject matter.

IV. PRIOR ART REJECTIONS

In the Office Action, claims 8-28 were rejected under 35 U.S.C. §102 as being anticipated by Kocher, U.S. Patent 6,289,455 (Kocher). Claims 1-7 were rejected under 35 U.S.C. §103(a) as being obvious in view of the combination of Cohen et al., U.S. Patent 5,282,249 (Cohen) and Kocher.

Applicants respectfully traverse these rejections.

Specifically, claim 1 was rejected as follows:

> As to claim 1, Cohen teach and describe a system for controlling access to digital services comprising: (a) a control center configured to coordinate and provide digital services; (b) an uplink center configured to receive the digital services from the control center and transmit the digital services to a satellite (Fig. 1/1 Item 20); (c) the satellite configured to: (i) receive the digital services from the uplink center (Fig.1/2 Item 22); (ii) process the digital services (Fig. 1/2 Item 22), and (iii) transmit the digital services to a subscriber receiver station (Fig. 1/2 Item 24); (d) the subscriber receiver station configured to: (i) receive the digital services from the satellite (Fig. 1/2 Item 26); (a) control access to the digital services through an integrated receiver/decoder (IRD) (Fig. 1/2 Item 30);

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and (e) a conditional access module (CAM) communicatively coupled to the IRD (Fig. 1/2 Item 32), [col. 4, line 12 to line 66].

Cohen does not disclose the CAM comprising nonvolatile protected memory component having station information to enforce desired functionality. However, Kocher disclose the CAM (Fig. 2 Item 225) comprising: (i) a protected nonvolatile memory component, wherein (1) the protected nonvolatile memory component (col. 21, line 13 to line 15) is used to contain stat information to provide desired functionality and enforce one or more security policies (i.e., regulating access) for accessing the digital services (col. 10, line 5 to line 47 and col. 5, line 55 to col. 6, line 3); and (2) programming control and a programming charge pump are shared by both the protected nonvolatile memory component and a microprocessor's non-protected nonvolatile memory component; and (ii) a fixed state custom logic block configured to control access to the nonvolatile memory component (col. 21, line 2 to col. 22, line 25).

Kocher is analogous art because it discusses a method and apparatus for preventing piracy of digital content including the use of a smart card. Therefore, it would have been obvious to one ordinary skilled in the art at the time of invention to include the teachings and features of CAM found in Kocher in the smart card used by Cohen, to control access to the broadcast data, because Kocher's method of protected memory of monitored data by using state information would not only promote security structure in the system of Cohen during receiving and distributing digital content (Kocher: col. 5, line 55 to line 56) but will also provide safeguards against attempt by unauthorized person to breach security of system.

Applicant traverses the above rejections for one or more of the following reasons:

(1)   Kocher fails to teach, disclose or suggest two different nonvolatile memory components that share programming control and a programming charge pump; and

(2)   Kocher fails to teach, disclose or suggest programming control and a programming charge pump that are shared by both the protected nonvolatile memory component and a microprocessor's non-protected nonvolatile memory component.

Independent claims 1, 8, 15, and 22 are generally directed to controlling access to digital services. More specifically, the claims provide for a control center providing digital services to an uplink center that transmits the services to a satellite which sends it to a subscriber receiver station. A conditional access module (CAM) in the subscriber receiver station has specific functionality. Namely, a protected nonvolatile memory component contains state information that provides functionality and enforces security policies for accessing the digital services.

In addition, the protected nonvolatile memory component and a non-protected nonvolatile memory component of the microprocessor share a programming charge pump and programming control. Such a non-protected nonvolatile memory component, a protected nonvolatile memory component, and sharing is clearly described in paragraphs [0060]-[0069] and FIG. 6. In this regard, FIG. 6 clearly illustrates that the microprocessor's nonvolatile memory component 606 is not protected by the custom logic block 612 while the protected nonvolatile memory component 614 is secured via the custom logic block 612.

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In response to the above arguments, the final Office Action finds that the arguments were not persuasive. Namely, the final office Action states:

> In the disclosure applicant merely mentioned charge pump (only at paragraph 0068) and does not describe how this charge pump is different than any other charge pump already known in the art. Charge pumps use some form of switching device(s) to control the connection of voltages to the capacitor, such as memory, in a I/O environment, such as hardware architecture of Koehner (Fig.2).

Wikipedia defines a charge pump as:

> A charge pump is an electronic circuit that uses capacitors as energy storage elements to create either a higher or lower voltage power source.

Applicants are not contending that the charge pump is different than another charge pump already known in the art. What Applicants are asserting is that the prior art fails to teach the sharing of a programming charge pump and programming control on both a non-protected nonvolatile memory component and a protected nonvolatile memory component. In addition, Applicants have amended the claims to provide that data and address lines of the protected nonvolatile memory component are routed only to the fixed state custom logic block. The prior art fails to teach such an implementation. Paragraphs [0068]-[0069] of the originally filed specification describe the advantages of such shared control:

> [0068] Additionally, the two nonvolatile memory components 606 and 614 may share programming charge pumps and programming control. If the pumps and/or programming control are shared, care should be taken to ensure that data and address lines of the dedicated nonvolatile memory component 614 are routed only to the custom logic block 612. This saves chip area and reduces chip cost. Accordingly, the microprocessor 602 cannot provide control information that may lead to a subsequent attack on the dedicated memory component 614. Sharing the charge pumps may be preferred to ease timing and high voltage requirements of the entire chip within CAM 512.
> [0069] There are many advantages to dedicating a modifiable protected nonvolatile memory component 614 to a custom logic block 612. For example, the protected nonvolatile memory component 614 can withstand substantial external attacks without inappropriately modifying the contents of the dedicated memory components 614. Further, the identity of the device (i.e., the CAM 512) is protected for use in operations with the CAM 512, IRD 126, and headend. For example, the CAM 512 provides non-modifiable uniqueness (i.e., stored in protected memory 614) that can be used to prevent cloning of the CAM 512 to obtain unauthorized access. Additionally, the CAM 512 may provide an IRD 126 for non-modifiable pairing and blacklist, and may provide a headend that controls access rights and blacklist. A blacklist is utilized to prevent CAMs 512 with a particular identification to be used/cloned. With a blacklist, the headend may provide a list of blacklisted/unauthorized cards to an IRD 126. The IRD 126 then refuses to grant access rights if the CAM 512 being utilized is on the blacklist. Accordingly, uniquely identified CAMs 512 with a unique identification that is only accessible through a custom logic block 612 may be utilized to prevent unauthorized access and cloning. By preventing the system I/O module 608, system bus 610, microprocessor 602, or memory access control unit from directly accessing the protected nonvolatile memory component 614, traditionally successful security compromises are no longer possible.

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Again, the novel features of the invention do not lie in the mere use of the charge pump. Instead, Applicants submit that the sharing of the programming control and programming charge pump across the two unique nonvolatile memory components are not even remotely contemplated by the cited prior art. Further, the routing of the data and address lines of the protected component while still sharing the same programming charge pump provides unique advantages to the system and design of the present invention. In this regard, the specification provide that such a design saves chip area and reduces chip cost while avoiding the ability for a microprocessor to provide control information that leads to a subsequent attack on the memory component. Such advantages are clearly absent from the prior art and any known method of use of charge pumps.

In addition, Applicants note that the final Office Action admits that Kocher fails to teach the use of a charge pump. In this regard, the Action provides that charge pumps and the combination or manner in which they are used is known in the art. Such an assertion is wholly without merit.

Applicants respectfully traverse the rejection under 35 U.S.C. § 102(e) because the disclosure of Kocher fails to meet the threshold for anticipation, i.e. placing the public in possession of the claimed invention. Specifically, anticipation under 35 U.S.C. § 102 has strict requirements that all elements of the claim must be found in a single reference in order to support an anticipation rejection (see e.g. M.P.E.P. 2131). A claim is anticipated only when a single prior art reference discloses each and every limitation in the claim. See, e.g., *Glaxo Inc. v. Novopharm Ltd.*, 34 USPQ2d 1565 (Fed. Cir. 1995). The disclosure need not be express, but may anticipate by inherency <u>where it would be appreciated by one of ordinary skill in the art</u>. *Id.* See also *In re Robinson*, 49 USPQ2d 1949, 1950-51, (Fed. Cir. 1999) ("if the prior art reference does not expressly set forth a particular element of the claim, that reference still may anticipate if that element is 'inherent' in its disclosure. To establish inherency, the extrinsic evidence 'must make clear that the missing descriptive matter is necessarily present in the thing described in the reference, and that it would be recognized by persons of ordinary skill'"). The requirement that an inherent element in a disclosure must be recognized by persons of ordinary skill in the art reflects the necessity that to constitute prior art under section 102, a reference must put subject matter into the possession of the public. See, e.g., *University of California v. Eli Lilly and Co.*, 43 USPQ2d 1398 (Fed. Cir. 1997). Therefore, in situations where an inherent element would not be recognized by persons of ordinary skill in the art, the

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reference cannot be anticipatory because a artisan cannot take the description of the invention in the printed publication, combine it with his own knowledge of the particular art, and from this combination be put in possession of the invention on which a patent is sought. See, e.g., *In re LeGrice*, 133 USPQ 365 (C.C.P.A. 1965).

In view of the above, Applicants submit that the use of a charge pump as claimed is not an inherent element of Kocher and would not be recognized by persons of ordinary skill in the art. In this regard, Kocher cannot be anticipatory nor can it be used to reject the claims under 35 U.S.C. §102.

Further, under MPEP §2142 and 2143.03 "To establish *prima facie* obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art. *In re Royka*, 490 F.2d 981, 180 USPQ 580 (CCPA 1974). "All words in a claim must be considered in judging the patentability of that claim against the prior art." *In re Wilson*, 424 F.2d 1382, 1385, 165 USPQ 494, 496 (CCPA 1970)." In this regard, the claim limitations regarding the sharing of programming charge pumps and programming control cannot merely be ignored or bypassed when rejecting the claims. Nor can such language merely be bypassed by stating that the claims merely recite the use of a charge pump without acknowledging or even addressing the sharing of the charge pumps among multiple nonvolatile memories or the manner and context in which the charge pump is being used.

Moreover, the various elements of Applicants' claimed invention together provide operational advantages over Kocher and Cohen. In addition, Applicants' invention solves problems not recognized by Kocher and Cohen.

Thus, Applicants submit that independent claims 1, 8, 15, and 22 are allowable over Kocher and Cohen. Further, dependent claims 2-7, 9-14, 16-20, and 23-28 are submitted to be allowable over Kocher and Cohen in the same manner, because they are dependent on independent claims 1, 8, 15, and 22, respectively, and thus contain all the limitations of the independent claims. In addition, dependent claims 2-7, 9-14, 16-20, and 23-28 recite additional novel elements not shown by Kocher and Cohen.

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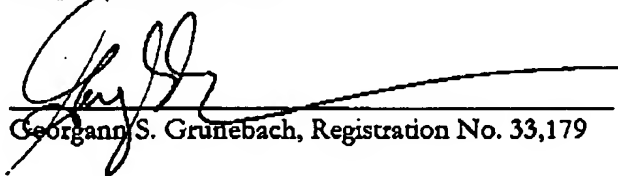Serial No. 10/085,920   PD-200337

V.   CONCLUSION

In view of the above, it is submitted that this application is now in good order for allowance and such allowance is respectfully solicited. Should the Examiner believe minor matters still remain that can be resolved in a telephone interview, the Examiner is urged to call Applicants' undersigned attorney.

Respectfully submitted,

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